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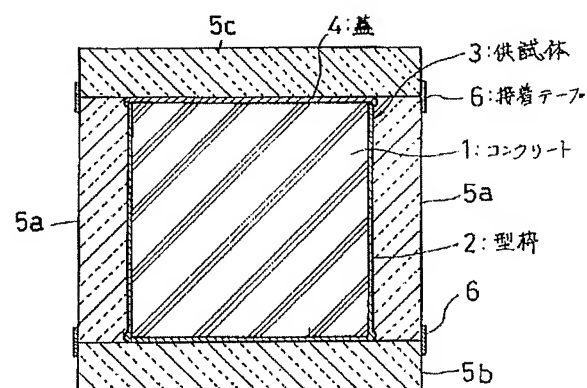
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(54)【発明の名称】 コンクリート構造体の強度管理方法

(57)【要約】

【目的】 コンクリート構造体の強度管理を、小型の供試体でもって精度良くかつ容易に行う。

【構成】 強度を推定しようとするコンクリート構造体と同じコンクリート1を円筒容器状の型枠2内に打設するとともに、その上部開口を蓋3で閉塞して供試体4を成型し、コンクリートの打設直後の型枠2と蓋3の外表面全面を、周方向で複数個に分割するとともに全体を均一な厚みとした断熱性の被覆材5で被覆し、被覆材5どうしの合わせ箇所を接着テープ6でシールし、所定期間養生後に型枠2内から供試体4を取り出し、その強度を測定してコンクリート構造体の強度を管理する。



【特許請求の範囲】

【請求項 1】 強度を推定しようとするコンクリート構造体と同じコンクリートを円筒容器状の型枠内に打設するとともに、その上部開口を蓋で閉塞して供試体を成型し、コンクリートの打設直後の型枠と蓋の外表面全面を、周方向で複数個に分割するとともに全体を均一な厚みとした断熱性の被覆材で被覆し、前記被覆材どうしの合わせ箇所をシール材でシールし、所定期間養生後に前記型枠内から前記供試体を取り出して、その強度を測定することを特徴とするコンクリート構造体の強度管理方法。

【請求項 2】 請求項 1 の合わせ箇所互いに隣接する被覆材の一方に凸部を、他方に前記凸部を嵌合する凹部をそれぞれ一体接続してあるコンクリート構造体の強度管理方法。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、断面寸法の大きいコンクリート構造体やセメント使用量の多い高強度コンクリート構造体などのコンクリート構造体の強度管理方法に関する。

【0002】

【従来の技術】従来のこのようなコンクリート構造体の強度管理方法としては、特開平 2-300646 号公報に示されているものがあった。

【0003】この従来例によれば、コンクリート構造体と同じコンクリートを、直径 10cm、高さ 20cm、または、直径 15cm、高さ 30cm の表面平滑な円筒形の型枠内に打設して小型の供試体を成型し、コンクリートの打設直後に、ポリスチレンなどの断熱材で成型した外表面の横断面形状が四角形の容器に供試体を埋め込み、その容器の開口をポリスチレンなどの断熱材で成型した蓋で閉塞し、その蓋の周囲を接着テープでシールし、断熱養生によりコンクリート構造体と同等の温度履歴を与え、コンクリート構造体の強度を精度良く推定できるようにしている。

【0004】

【発明が解決しようとする課題】しかしながら、従来例の場合、円筒形の型枠内に成型される供試体を外表面の横断面形状が四角形の断熱性の容器に埋め込むものであり、供試体の外表面に対する容器の厚みが周方向において異なり、供試体の外表面からの放熱量において、周方向で差を生じ、それがために供試体の温度履歴と、推定しようとするコンクリート構造体の実際の温度履歴との間に微妙なズレを生じ、強度の推定精度が低下する欠点があった。

【0005】本発明は、このような事情に鑑みてなされたものであって、請求項 1 に係る発明のコンクリート構造体の強度管理方法は、その強度管理を、小型の供試体でもって精度良くかつ容易に行うことができるようにす

ることを目的とし、そして、請求項 2 に係る発明のコンクリート構造体の強度管理方法は、被覆材どうしの合わせ箇所からの放熱を良好に防止して、強度管理の精度を一層向上できるようにすることを目的とする。

【0006】

【課題を解決するための手段】請求項 1 に係る発明のコンクリート構造体の強度管理方法は、上述のような目的を達成するために、強度を推定しようとするコンクリート構造体と同じコンクリートを円筒容器状の型枠内に打設するとともに、その上部開口を蓋で閉塞して供試体を成型し、コンクリートの打設直後の型枠と蓋の外表面全面を、周方向で複数個に分割するとともに全体を均一な厚みとした断熱性の被覆材で被覆し、被覆材どうしの合わせ箇所をシール材でシールし、所定期間養生後に型枠内から供試体を取り出して、その強度を測定することを特徴としている。

【0007】請求項 2 に係る発明のコンクリート構造体の強度管理方法は、上述のような目的を達成するために、請求項 1 の合わせ箇所互いに隣接する被覆材の一方に凸部を、他方に前記凸部を嵌合する凹部をそれぞれ一体接続して構成する。

【0008】

【作用】請求項 1 に係る発明のコンクリート構造体の強度管理方法の構成によれば、コンクリートの打設直後の供試体の外表面全面を均一な厚みの断熱性の被覆材で被覆し、コンクリートが硬化するときに発生する反応熱の逃げを、供試体全体にわたって均質な状態で防止して養生固化することができる。

【0009】請求項 2 に係る発明のコンクリート構造体の強度管理方法の構成によれば、隣合う被覆材どうしの合わせ箇所において、熱が外部に逃げようとする凸部と凹部との面接触部分の長さを長くし、放熱を抑制することができる。

【0010】

【実施例】次に、本発明の実施例を図面に基づいて詳述する。

【0011】図 1 の分解斜視図、および、図 2 の縦断面図に示すように、強度を推定しようとするコンクリート構造体と同じコンクリート 1 を、鉄製で使い捨てタイプの有底円筒容器状の型枠 2 内に打設して供試体 3 を成型するとともに、その上部開口をプラスチック製の蓋 4 で閉塞する。

【0012】次いで、コンクリート 1 を打設した直後の型枠 2 と蓋 3 の外表面全面を、断熱性材料としての発泡スチロールで形成した被覆材で被覆する。

【0013】被覆材は、周方向で互いに等しい形状に二分割されて型枠 2 の周面に密着する横断面形状が円弧状の側板部材 5a、5a と、その側板部材 5a、5a の下側端面と型枠 2 の底とを密着状態で載置する底板部材 5b と、側板部材 5a、5a の上側端面と蓋 3 の上面とに

密着する天板部材 5 c とから構成されている。

【0014】前記側板部材 5 a, 5 a、底板部材 5 b および天板部材 5 c は互いに等しい厚みに形成されている。

【0015】具体的な寸法の一例を示せば、供試体 3 としては、高さおよび直径のいずれもが 10cm であり、そして、側板部材 5 a, 5 a、底板部材 5 b および天板部材 5 c それぞれの厚みが 2 cm である。但し、側板部材 5 a, 5 a、底板部材 5 b および天板部材 5 c それぞれの厚みは、推定しようとするコンクリート構造体に合わせて適当な厚みのものが使用される。例えば、断面寸法が大きくなる程、また、水セメント比が小さくてセメント使用量が大きくなる程、厚みの大きいものが使用されることになる。

【0016】そして、最終的に側板部材 5 a, 5 a、底板部材 5 b および天板部材 5 c それぞれどうしの合わせ箇所をシール材としての接着テープ 6 を貼ることによりシールする。

【0017】これらの被覆材 5 で断熱した供試体 3 を多数準備しておき、所定期間養生後に型枠 2 内から供試体 3 を取り出して、その強度を測定する。これにより、適当な材令ごとに強度を測定し、コンクリート構造体の強度を推定できる。

【0018】図 3 は、被覆材の変形例を示し、先の側板部材 5 a, 5 a それぞれに、底板部材 5 b の半分が一体化されて側板部材 11 a, 11 a が形成され、その側板部材 11 a, 11 a と天板部材 11 b の三個の部材から被覆材が構成されている。

【0019】図 4 は、被覆材の変形例を示し、先の側板部材 11 a, 11 a それぞれに、天板部材 11 b の半分が一体化されて側板部材 21 a, 21 a が形成され、その二個の側板部材 21 a, 21 a によって被覆材が構成されている。

【0020】図 5 の分解斜視図、および、図 6 の縦断面図は、被覆材の変形例を示し、先の側板部材 5 a, 5 a それぞれが同一形状に構成され、その周方向の一方の端面に凸部 31 が一体形成されるとともに、他方の端面に前記凸部 31 を嵌合する凹部 32 が一体形成され、そして、高さ方向の両端面それぞれに凸部 33 a, 33 b が一体形成されている。

【0021】一方、底板部材 5 b の上面に、前記側板部材 5 a の下側の凸部 33 a を嵌合する凹部 34 が一体形成され、そして、天板部材 5 c の下面に、前記側板部材 5 a の上側の凸部 33 b を嵌合する凹部 35 が一体形成されている。

【0022】この被覆材の変形例によれば、凸部 31, 33 a, 33 b それぞれと凹部 32, 34, 35 それぞれとの嵌合構成により、より一層高い断熱効果を発揮することができる。

【0023】被覆材を構成する断熱材料としては、ポリ

スチレン、ウレタン、グラスウールなど各種の断熱材料が適用できる。また、周方向に 3 個以上に、すなわち、全体として 5 個以上に分割して被覆材を構成しても良い。

【0024】

【発明の効果】請求項 1 に係る発明のコンクリート構造体の強度管理方法によれば、供試体の外表面全面を、均一な厚みの断熱性被覆材で被覆して、供試体の外表面全面からの放熱量を均一にするから、断面寸法の大きいコンクリート構造体やセメント使用量の多い高強度コンクリート構造体などのコンクリート構造体の硬化に伴って発生する反応熱の内部への蓄積と同様の温度履歴を精度良く供試体に付与することができ、コンクリート構造体の強度管理を、小型の供試体でもって精度良く行うことができるようになった。

【0025】しかも、周方向で複数個に分割した被覆材を用いるから、例えば、凹部などの穴の中に供試体を埋め込む場合に比べ、両側から挟むようにして外嵌し、その合わせ面箇所をシール材でシールするだけで型枠や蓋の外表面に被覆材を密着して被覆でき、その作業を容易にできる利点がある。殊に、紙製の型枠を用いた場合に、従来のように供試体を強制的に埋め込むものでは、その埋め込みに伴って外部から圧力を受け、供試体を変形しやすいのに比べ、本発明では、外部から圧力を加えることを抑制でき、紙製の型枠であっても強度管理を良好に行うことができるようになった。

【0026】請求項 2 に係る発明のコンクリート構造体の強度管理方法によれば、分割された被覆材どうしの合わせ箇所からの熱の逃げを効果的に防止するから、反応熱の内部への蓄積と同様の温度履歴をより一層精度良く供試体に付与することができ、コンクリート構造体の強度管理をより一層精度良く行うことができるようになった。

【図面の簡単な説明】

【図 1】分解斜視図である。

【図 2】縦断面図である。

【図 3】被覆材の変形例を示す分解斜視図である。

【図 4】被覆材の変形例を示す分解斜視図である。

【図 5】被覆材の変形例を示す分解斜視図である。

【図 6】縦断面図である。

【符号の説明】

1…コンクリート

2…型枠

3…蓋

4…供試体

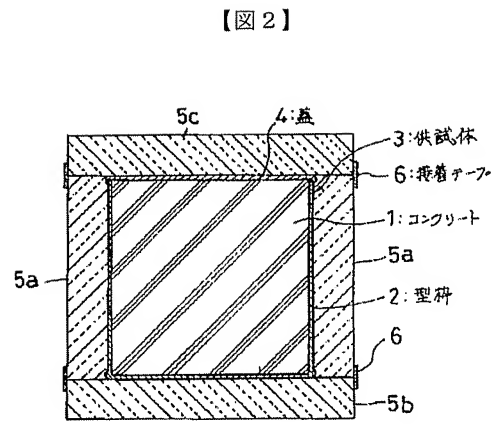
5…被覆材

6…シール材としての接着テープ

31, 33 a, 33 b…凸部

32, 34, 35…凹部

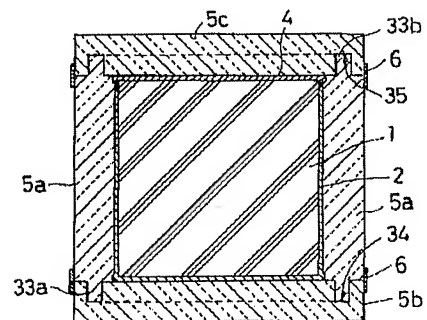
【図 1】



【図 2】



【図 5】



## PATENT ABSTRACTS OF JAPAN

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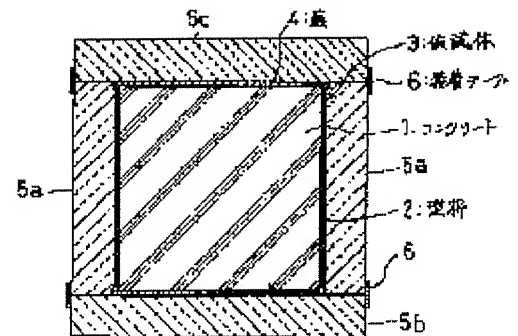
(21)Application number : 03-276680 (71)Applicant : TAKENAKA KOMUTEN CO LTD  
 (22)Date of filing : 26.09.1991 (72)Inventor : IWASHIMIZU TAKASHI

## (54) METHOD FOR CONTROLLING STRENGTH OF CONCRETE STRUCTURE BODY

## (57)Abstract:

PURPOSE: To enable the strength of a concrete a structure body to be controlled accurately and easily even in case of a small sample.

CONSTITUTION: A concrete 1 which is same as a concrete structure body whose strength is to be estimated is placed into a mold frame 2 in cylindrical container shape, at the same time the upper opening is blocked by a cover 4 for forming a sample 3, an entire surface of an outer surface of the mold frame 2 and the cover 4 immediately after placement of concrete is divided into a plurality of pieces in peripheral direction, and at the same time an entire part is coated with a heat-insulating film material 5 which is uniform in thickness. Laminated parts of the film material 5 are sealed by an adhesive 6, the sample 3 is taken out of the mold frame 2 after curing for a specified period, and then the strength is measured, thus enabling the strength of the concrete structure body to be controlled.



## LEGAL STATUS

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 [Date of final disposal for application]  
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CLAIMS

[Claim(s)]

[Claim 1] While placing the same concrete as the concrete structure which is going to presume reinforcement in cylinder container-like shuttering The up opening is blockaded with a lid and a specimen is cast. The whole outside-surface surface of the shuttering and the lid immediately after placing of concrete While dividing into plurality in a hoop direction, cover with the adiathermic cladding material which made the whole uniform thickness, and carry out the seal of the doubling part of said cladding materials by the sealant, and said specimen is taken out from the inside of said shuttering after predetermined period care of health. The compaction-control-by-strength approach of the concrete structure characterized by measuring the reinforcement.

[Claim 2] The compaction-control-by-strength approach of the concrete structure the crevice which fits heights into one side of the cladding material which adjoins mutually in the doubling part of claim 1, and fits said heights into another side is really connected [ concrete ], respectively.

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CLAIMS

[Claim(s)]

[Claim 1] While placing the same concrete as the concrete structure which is going to presume reinforcement in cylinder container-like shuttering The up opening is blockaded with a lid and a specimen is cast. The whole outside-surface surface of the shuttering and the lid immediately after placing of concrete While dividing into plurality in a hoop direction, cover with the adiathermic cladding material which made the whole uniform thickness, and carry out the seal of the doubling part of said cladding materials by the sealant, and said specimen is taken out from the inside of said shuttering after predetermined period care of health. The compaction-control-by-strength approach of the concrete structure characterized by measuring the reinforcement.

[Claim 2] The compaction-control-by-strength approach of the concrete structure the crevice which fits heights into one side of the cladding material which adjoins mutually in the doubling part of claim 1, and fits said heights into another side is really connected [ concrete ], respectively.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the compaction-control-by-strength approach of the concrete structures, such as the concrete structure with a large cross-section dimension, and the high-strength-concrete structure with much amount of the cement used.

[0002]

[Description of the Prior Art] There were some which are shown in JP,2-300646,A as the compaction-control-by-strength approach of such the conventional concrete structure.

[0003] According to this conventional example, the same concrete as the concrete structure The diameter of 10cm, height of 20cm, Place in the shuttering of a smooth cylindrical shape and a small specimen is cast. or a front face with a diameter [ of 15cm ], and a height of 30cm -- The cross-section configuration of the outside surface cast with heat insulators, such as polystyrene, immediately after placing of concrete embeds a specimen in a square container. It blockades with the lid which cast opening of the container with heat insulators, such as polystyrene, the seal of the perimeter of the lid is carried out with adhesive tape, temperature hysteresis equivalent to the concrete structure is given by adiabatic curing, and it enables it to presume the reinforcement of the concrete structure with a sufficient precision.

[0004]

[Problem(s) to be Solved by the Invention] However, it is that to which the cross-section configuration of an outside surface embeds the specimen cast in the shuttering of a cylindrical shape in a square adiathermic container in the case of the conventional example. The thickness of the container to the outside surface of a specimen differs in a hoop direction, and it sets from the outside surface of a specimen to heat release. The difference was produced in the hoop direction, it produced delicate gap between temperature hysteresis with the actual concrete structure which it is going to presume to be the temperature hysteresis of a specimen to accumulate, and there was a fault to which a strong presumed precision falls.

[0005] The compaction-control-by-strength approach of the concrete structure invention which this invention is made in view of such a situation, and relates to claim 1 The compaction-control-by-strength approach of the concrete structure invention concerning claim 2 for the purpose of enabling it to carry out often [ precision ] and easily that a small specimen is also about the compaction control by strength The heat dissipation from the doubling part of cladding materials is prevented good, and it aims at enabling it to improve the precision of compaction control by strength further.

[0006]

[Means for Solving the Problem] The compaction-control-by-strength approach of the concrete structure invention concerning claim 1 In order to attain the above purposes, while placing the same concrete as the concrete structure which is going to presume reinforcement in cylinder container-like shuttering The up opening is blockaded with a lid and a specimen is cast. The whole outside-surface surface of the shuttering and the lid immediately after placing of concrete While dividing into plurality in a hoop direction, it covers with the adiathermic cladding material which made the whole uniform thickness, and the seal of the doubling part of cladding materials is carried out by the sealant, and it is characterized by taking out a specimen from the inside of shuttering after predetermined period care of health, and measuring the reinforcement.

[0007] The compaction-control-by-strength approach of the concrete structure starting invention really connects [ claim / 2 ] the crevice which fits heights into one side of the cladding material which adjoins mutually in the doubling part of claim 1 in order to attain the above purposes, and fits said heights into another side, respectively, and it constitutes.

[0008]

[Function] According to the configuration of the compaction-control-by-strength approach of the concrete structure of invention concerning claim 1, the whole outside-surface surface of the specimen immediately after placing of concrete is



covered with the adiathermic cladding material of uniform thickness, the recess of the heat of reaction generated when concrete hardens can be prevented in the homogeneous condition over the whole specimen, and care-of-health solidification can be carried out.

[0009] According to the configuration of the compaction-control-by-strength approach of the concrete structure of invention concerning claim 2, in the doubling part of \*\*\*\*\* cladding materials, heat can lengthen the die length of the field contact part of the heights and the crevice which are going to escape outside, and can control heat dissipation.

[0010]

[Example] Next, the example of this invention is explained in full detail based on a drawing.

[0011] As shown in the decomposition perspective view of drawing 1 , and drawing of longitudinal section of drawing 2 , while placing the same concrete 1 as the concrete structure which is going to presume reinforcement by iron in the shuttering 2 of the shape of a disposable type closed-end cylinder container and casting a specimen 3, the up opening is blockaded with the lid 4 made from plastics.

[0012] Subsequently, the whole outside-surface surface of the shuttering 2 and the lid 3 immediately after placing concrete 1 is covered with the cladding material formed with the styrene foam as an adiathermic ingredient.

[0013] The cross-section configuration which the cladding material of each other is halved by the equal configuration in a hoop direction, and is stuck to the peripheral surface of shuttering 2 The radii-like side plate members 5a and 5a, It consists of top-plate member 5c which sticks the bottom end face of the side plate members 5a and 5a, and the bottom of shuttering 2 to bottom plate member 5b laid in the state of adhesion, and the top end face of the side plate members 5a and 5a and the top face of a lid 3.

[0014] Said side plate members 5a and 5a, bottom plate member 5b, and top-plate member 5c are mutually formed in equal thickness.

[0015] if an example of a concrete dimension is shown -- as a specimen 3 -- both height and a diameter -- although -- 10cm -- it is -- and the side plate members 5a and 5a, bottom plate member 5b, and top-plate member 5c -- each thickness is 2cm. however, the side plate members 5a and 5a, bottom plate member 5b, and top-plate member 5c -- the thing of suitable thickness is used according to the concrete structure which is going to presume each thickness. For example, what has large thickness will be used, so that a water cement ratio is so small that a cross-section dimension becomes large and the amount of the cement used becomes large.

[0016] and -- final -- the side plate members 5a and 5a, bottom plate member 5b, and top-plate member 5c -- the seal of the doubling part of comrades is carried out by sticking the adhesive tape 6 as a sealant, respectively.

[0017] Many specimens 3 which insulated with these cladding materials 5 are prepared, a specimen 3 is taken out from the inside of shuttering 2 after predetermined period care of health, and the reinforcement is measured. This measures reinforcement for every suitable age, and the reinforcement of the concrete structure can be presumed.

[0018] drawing 3 -- the modification of a cladding material -- being shown -- the previous side plate members 5a and 5a -- it is alike, respectively, and the one half of bottom plate member 5b is unified, the side plate members 11a and 11a are formed, and the cladding material consists of the side plate members 11a and 11a and three members of top-plate member 11b.

[0019] drawing 4 -- the modification of a cladding material -- being shown -- the previous side plate members 11a and 11a -- it is alike, respectively, and the one half of top-plate member 11b is unified, the side plate members 21a and 21a are formed, and the cladding material is constituted by the two side plate members 21a and 21a.

[0020] the decomposition perspective view of drawing 5 , and drawing of longitudinal section of drawing 6 -- the modification of a cladding material -- being shown -- the previous side plate members 5a and 5a -- while each is constituted by the same configuration and heights 31 are really formed in one end face of the hoop direction, the crevice 32 which fits said heights 31 into an other-end side is really formed, and Heights 33a and 33b are really formed in each both-ends side of the height direction.

[0021] On the other hand, the crevice 34 which fits heights 33a of said side plate member 5a bottom into the top face of bottom plate member 5b is really formed, and the crevice 35 which fits heights 33b of said side plate member 5a top into the inferior surface of tongue of top-plate member 5c is really formed.

[0022] according to the modification of this cladding material -- Heights 31, 33a, and 33b -- respectively -- \*\* -- crevices 32, 34, and 35 -- respectively -- \*\* -- still higher adiabatic efficiency can be demonstrated by the fitting configuration.

[0023] As heat insulating materials which constitute a cladding material, various kinds of heat insulating materials, such as polystyrene, urethane, and glass wool, are applicable. Moreover, it may divide into five or more pieces as three or more pieces, i.e., the whole, in a hoop direction, and a cladding material may be constituted.

[0024]

[Effect of the Invention] According to the compaction-control-by-strength approach of the concrete structure invention

concerning claim 1 Since the whole outside-surface surface of a specimen is covered with the adiathermic cladding material of uniform thickness and heat release from the whole outside-surface surface of a specimen is made into homogeneity The same temperature hysteresis as are recording inside the heat of reaction generated with hardening of the concrete structures, such as the concrete structure with a large cross-section dimension and the high-strength-concrete structure with much amount of the cement used, can be given to a specimen with a sufficient precision. It can carry out now with a sufficient precision that a small specimen is also about the compaction control by strength of the concrete structure.

[0025] And since the cladding material divided into plurality in the hoop direction is used, for example, into holes, such as a crevice, compared with the case where a specimen is embedded, as it inserts, it is attached outside from both sides, and a cladding material can be stuck and covered only with carrying out the seal of the mating-face part by the sealant to the outside surface of shuttering or a lid, and there is an advantage which does the activity easy. In connection with the embedding, the pressure was received from the exterior, and when the shuttering of especially the product made of paper was used, compared with what is easy to transform a specimen, by this invention, it could control applying a pressure from the exterior, and even if it was the shuttering made of paper, compaction control by strength could be performed good what embeds a specimen compulsorily like before.

[0026] According to the compaction-control-by-strength approach of the concrete structure invention concerning claim 2, since the recess of the heat from the doubling part of the divided cladding materials was prevented effectively, the same temperature hysteresis as are recording inside heat of reaction can be given to a specimen with a much more sufficient precision, and compaction control by strength of the concrete structure could be performed with a much more sufficient precision.

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TECHNICAL FIELD

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[Industrial Application] This invention relates to the compaction-control-by-strength approach of the concrete structures, such as the concrete structure with a large cross-section dimension, and the high-strength-concrete structure with much amount of the cement used.

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PRIOR ART

[Description of the Prior Art] There were some which are shown in JP,2-300646,A as the compaction-control-by-strength approach of such the conventional concrete structure.

[0003] According to this conventional example, the same concrete as the concrete structure The diameter of 10cm, height of 20cm, Place in the shuttering of a smooth cylindrical shape and a small specimen is cast. or a front face with a diameter [ of 15cm ], and a height of 30cm -- The cross-section configuration of the outside surface cast with heat insulators, such as polystyrene, immediately after placing of concrete embeds a specimen in a square container. It blockades with the lid which cast opening of the container with heat insulators, such as polystyrene, the seal of the perimeter of the lid is carried out with adhesive tape, temperature hysteresis equivalent to the concrete structure is given by adiabatic curing, and it enables it to presume the reinforcement of the concrete structure with a sufficient precision.

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## EFFECT OF THE INVENTION

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[Effect of the Invention] According to the compaction-control-by-strength approach of the concrete structure invention concerning claim 1 Since the whole outside-surface surface of a specimen is covered with the adiathermic cladding material of uniform thickness and heat release from the whole outside-surface surface of a specimen is made into homogeneity The same temperature hysteresis as are recording inside the heat of reaction generated with hardening of the concrete structures, such as the concrete structure with a large cross-section dimension and the high-strength-concrete structure with much amount of the cement used, can be given to a specimen with a sufficient precision. It can carry out now with a sufficient precision that a small specimen is also about the compaction control by strength of the concrete structure.

[0025] And since the cladding material divided into plurality in the hoop direction is used, for example, into holes, such as a crevice, compared with the case where a specimen is embedded, as it inserts, it is attached outside from both sides, and a cladding material can be stuck and covered only with carrying out the seal of the mating-face part by the sealant to the outside surface of shuttering or a lid, and there is an advantage which does the activity easy. In connection with the embedding, the pressure was received from the exterior, and when the shuttering of especially the product made of paper was used, compared with what is easy to transform a specimen, by this invention, it could control applying a pressure from the exterior, and even if it was the shuttering made of paper, compaction control by strength could be performed good what embeds a specimen compulsorily like before.

[0026] According to the compaction-control-by-strength approach of the concrete structure invention concerning claim 2, since the recess of the heat from the doubling part of the divided cladding materials was prevented effectively, the same temperature hysteresis as are recording inside heat of reaction can be given to a specimen with a much more sufficient precision, and compaction control by strength of the concrete structure could be performed with a much more sufficient precision.

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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] However, it is that to which the cross-section configuration of an outside surface embeds the specimen cast in the shuttering of a cylindrical shape in a square adiathermic container in the case of the conventional example. The thickness of the container to the outside surface of a specimen differs in a hoop direction, and it sets from the outside surface of a specimen to heat release. The difference was produced in the hoop direction, it produced delicate gap between temperature hysteresis with the actual concrete structure which it is going to presume to be the temperature hysteresis of a specimen to accumulate, and there was a fault to which a strong presumed precision falls. [0005] The compaction-control-by-strength approach of the concrete structure invention which this invention is made in view of such a situation, and relates to claim 1 The compaction-control-by-strength approach of the concrete structure invention concerning claim 2 for the purpose of enabling it to carry out often [ precision ] and easily that a small specimen is also about the compaction control by strength The heat dissipation from the doubling part of cladding materials is prevented good, and it aims at enabling it to improve the precision of compaction control by strength further.

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MEANS

[Means for Solving the Problem] The compaction-control-by-strength approach of the concrete structure invention concerning claim 1 In order to attain the above purposes, while placing the same concrete as the concrete structure which is going to presume reinforcement in cylinder container-like shuttering The up opening is blockaded with a lid and a specimen is cast. The whole outside-surface surface of the shuttering and the lid immediately after placing of concrete While dividing into plurality in a hoop direction, it covers with the adiathermic cladding material which made the whole uniform thickness, and the seal of the doubling part of cladding materials is carried out by the sealant, and it is characterized by taking out a specimen from the inside of shuttering after predetermined period care of health, and measuring the reinforcement.

[0007] The compaction-control-by-strength approach of the concrete structure starting invention really connects [ claim / 2 ] the crevice which fits heights into one side of the cladding material which adjoins mutually in the doubling part of claim 1 in order to attain the above purposes, and fits said heights into another side, respectively, and it constitutes.

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OPERATION

[Function] According to the configuration of the compaction-control-by-strength approach of the concrete structure of invention concerning claim 1, the whole outside-surface surface of the specimen immediately after placing of concrete is covered with the adiathermic cladding material of uniform thickness, the recess of the heat of reaction generated when concrete hardens can be prevented in the homogeneous condition over the whole specimen, and care-of-health solidification can be carried out.

[0009] According to the configuration of the compaction-control-by-strength approach of the concrete structure of invention concerning claim 2, in the doubling part of \*\*\*\*\* cladding materials, heat can lengthen the die length of the field contact part of the heights and the crevice which are going to escape outside, and can control heat dissipation.

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EXAMPLE

[Example] Next, the example of this invention is explained in full detail based on a drawing.

[0011] As shown in the decomposition perspective view of drawing 1, and drawing of longitudinal section of drawing 2, while placing the same concrete 1 as the concrete structure which is going to presume reinforcement by iron in the shuttering 2 of the shape of a disposable type closed-end cylinder container and casting a specimen 3, the up opening is blockaded with the lid 4 made from plastics.

[0012] Subsequently, the whole outside-surface surface of the shuttering 2 and the lid 3 immediately after placing concrete 1 is covered with the cladding material formed with the styrene foam as an adiathermic ingredient.

[0013] The cross-section configuration which the cladding material of each other is halved by the equal configuration in a hoop direction, and is stuck to the peripheral surface of shuttering 2 The radii-like side plate members 5a and 5a, It consists of top-plate member 5c which sticks the bottom end face of the side plate members 5a and 5a, and the bottom of shuttering 2 to bottom plate member 5b laid in the state of adhesion, and the top end face of the side plate members 5a and 5a and the top face of a lid 3.

[0014] Said side plate members 5a and 5a, bottom plate member 5b, and top-plate member 5c are mutually formed in equal thickness.

[0015] if an example of a concrete dimension is shown -- as a specimen 3 -- both height and a diameter -- although -- 10cm -- it is -- and the side plate members 5a and 5a, bottom plate member 5b, and top-plate member 5c -- each thickness is 2cm. however, the side plate members 5a and 5a, bottom plate member 5b, and top-plate member 5c -- the thing of suitable thickness is used according to the concrete structure which is going to presume each thickness. For example, what has large thickness will be used, so that a water cement ratio is so small that a cross-section dimension becomes large and the amount of the cement used becomes large.

[0016] and -- final -- the side plate members 5a and 5a, bottom plate member 5b, and top-plate member 5c -- the seal of the doubling part of comrades is carried out by sticking the adhesive tape 6 as a sealant, respectively.

[0017] Many specimens 3 which insulated with these cladding materials 5 are prepared, a specimen 3 is taken out from the inside of shuttering 2 after predetermined period care of health, and the reinforcement is measured. This measures reinforcement for every suitable age, and the reinforcement of the concrete structure can be presumed.

[0018] drawing 3 -- the modification of a cladding material -- being shown -- the previous side plate members 5a and 5a -- it is alike, respectively, and the one half of bottom plate member 5b is unified, the side plate members 11a and 11a are formed, and the cladding material consists of the side plate members 11a and 11a and three members of top-plate member 11b.

[0019] drawing 4 -- the modification of a cladding material -- being shown -- the previous side plate members 11a and 11a -- it is alike, respectively, and the one half of top-plate member 11b is unified, the side plate members 21a and 21a are formed, and the cladding material is constituted by the two side plate members 21a and 21a.

[0020] the decomposition perspective view of drawing 5, and drawing of longitudinal section of drawing 6 -- the modification of a cladding material -- being shown -- the previous side plate members 5a and 5a -- while each is constituted by the same configuration and heights 31 are really formed in one end face of the hoop direction, the crevice 32 which fits said heights 31 into an other-end side is really formed, and Heights 33a and 33b are really formed in each both-ends side of the height direction.

[0021] On the other hand, the crevice 34 which fits heights 33a of said side plate member 5a bottom into the top face of bottom plate member 5b is really formed, and the crevice 35 which fits heights 33b of said side plate member 5a top into the inferior surface of tongue of top-plate member 5c is really formed.

[0022] according to the modification of this cladding material -- Heights 31, 33a, and 33b -- respectively -- \*\* -- crevices 32, 34, and 35 -- respectively -- \*\* -- still higher adiabatic efficiency can be demonstrated by the fitting configuration.

[0023] As heat insulating materials which constitute a cladding material, various kinds of heat insulating materials, such as polystyrene, urethane, and glass wool, are applicable. Moreover, it may divide into five or more pieces as three or more pieces, i.e., the whole, in a hoop direction, and a cladding material may be constituted.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is a decomposition perspective view.

[Drawing 2] It is drawing of longitudinal section.

[Drawing 3] It is the decomposition perspective view showing the modification of a cladding material.

[Drawing 4] It is the decomposition perspective view showing the modification of a cladding material.

[Drawing 5] It is the decomposition perspective view showing the modification of a cladding material.

[Drawing 6] It is drawing of longitudinal section.

[Description of Notations]

1 -- Concrete

2 -- Shuttering

3 -- Lid

4 -- Specimen

5 -- Cladding material

6 -- Adhesive tape as a sealant

31, 33a, 33b -- Heights

32, 34, 35 -- Crevice

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[Translation done.]

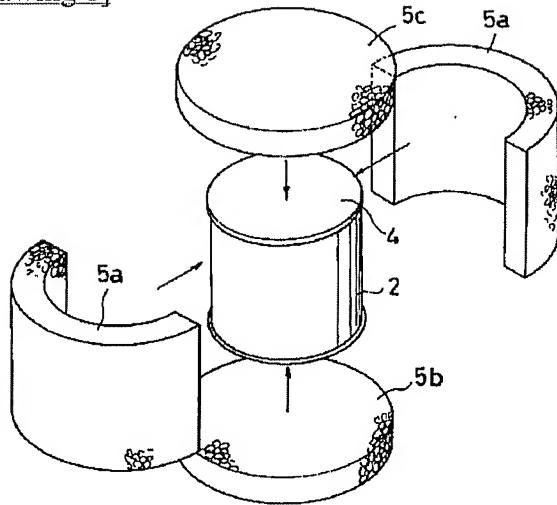
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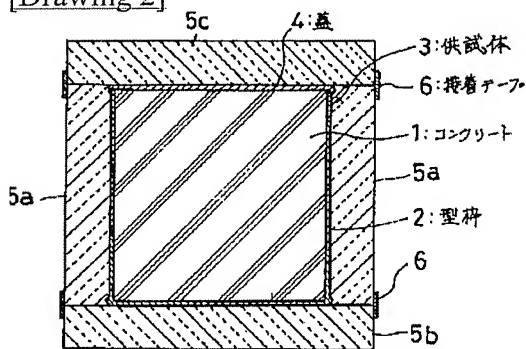
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## DRAWINGS

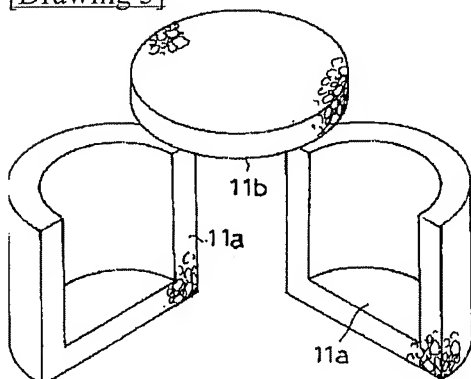
[Drawing 1]



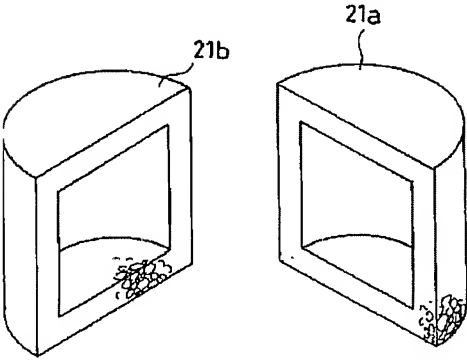
[Drawing 2]



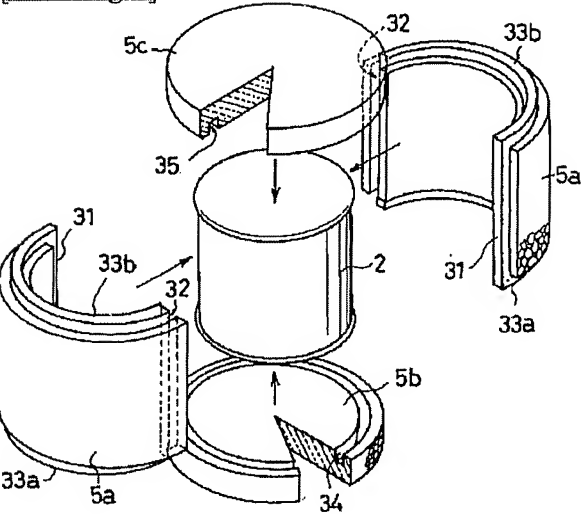
[Drawing 3]



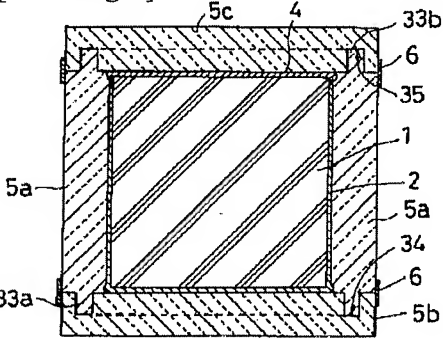
[Drawing 4]



[Drawing 5]



[Drawing 6]



[Translation done.]